

REMARKS

This application has been carefully reviewed in light of the Office Action dated November 10, 2005. Claims 1, 2, 6-13, 18-20, 22 and 25-30 are in the application. Claims 3-5 and 15-17 have been canceled without prejudice or disclaimer of subject matter, and will not be mentioned further. Claims 1, 13, 25, 26 and 30, the independent claims. Claims 1, 13, 25, 26 and 30 have been amended to define still more clearly what Applicants regard as their invention. Reconsideration and further examination are respectfully requested.

Claims 1, 2, 6-13, 18-20, 22 and 25-30 were rejected under 35 U.S.C. § 103(a) as being obvious from U.S. Patents 5,767,876 (Koike et al.) and 5,633,663 (Matsubara et al.), taken in combination.

Independent Claim 1 is directed to a color ink-jet recording apparatus using a black recording head that ejects black ink on the basis of black image data and a color recording head that ejects color ink on the basis of color image data, the color ink being such that it permeates through a recording medium at a higher speed than does the black ink. The apparatus comprises control means for controlling scanning of the black recording head and of the color recording head relative to the recording medium such as to complete a record image in a predetermined recording area including pixels on the recording medium by causing each of the black recording head and the color recording head to perform N recording scans in the same pixel, where N is an integer equal to or greater than 2. Data generating means, for each of the recording heads, generate image data for each of the N recording scans corresponding to the predetermined recording area, by using N mask patterns, for black image data corresponding to the N recording scans and N mask patterns for color image data corresponding to the N recording scans, so that black

image data corresponding to the predetermined recording area are allotted to each of the N recording scans, and color image data corresponding to the predetermined recording area are allotted to each of the N recording scans. Ink ejecting means are provided for ejecting the black ink and the color ink from the black recording head and the color recording head during each of the recording scans on the basis of the data allotted to each of the recording scans by the generating means.

Claim 1 also provides that total allotment rate of the N mask patterns for the black image data is 100% and total allotment rate of the N mask patterns for the color image data is 100%, and an allotment rate of the mask pattern for the black image data used in a given one of the N recording scans is smaller than 100% and is greater than a reference allotment rate, the reference allotment rate being $(100/N)\%$, and an allotment rate of the mask pattern for the color image data used in that one recording scan is greater than 0% and is smaller than the reference allotment rate. In addition, according to Claim 1, an allotment rate of the mask pattern for the black image data used in another recording scan is greater than 0% and is smaller than the reference allotment rate, and an allotment rate of the mask pattern for the color image data used in the latter recording scan is smaller than 100% and greater than the reference allotment rate.

Applicants submit that nothing in *Koike* would teach or suggest an allotment rate of a mask pattern for black image data used in a given one of N recording scans should be smaller than 100 % but greater than a reference allotment rate, the reference allotment rate being $(100/N) \%$, while an allotment rate of a mask pattern for color image data used in that one recording scan should be greater than 0 % but smaller than the reference allotment rate, together with the allotment rate of the mask pattern for the black image data used in another recording scan being greater than 0 % but smaller than the reference

allotment rate, while the allotment rate of the mask pattern for the color image data used in the latter recording scan is smaller than 100 % but greater than the reference allotment rate, as recited in Claim 1. In Fig. 40 of *Koike*, the allotment rate of the mask pattern for the black recording head (K) is 25%, which is greater than that of the color recording head, which is 0 %. Also, in Fig. 41, the allotment rate of the mask pattern of the black recording head (K) is 0, and is smaller than that of the color recording head. Nothing found or pointed out elsewhere in *Koike* is seen to teach or suggest the mentioned features of Claim 1.

Matsubara relates to a procedure in which black and color use different mask patterns from each other (see Fig. 28). That Fig. shows four-pass printing in which black uses the mask at a 50% duty ratio in each pass, and thus printing of a total 200% duty ratio is carried out. This printing is carried out for the purpose of emphasizing black. C, M and Y colors, which are not emphasized, use the mask at a 25% duty ratio in each pass, and thus printing with a total 100% duty ratio is carried out.

Even if *Matsubara* is deemed to show all that it is cited for, and even assuming for argument's sake that the proposed combination of that patent with *Koike* would be a proper one, the result of such combination would not meet the terms of Claim 1. Accordingly, that claim is believed to be allowable over *Koike* and *Matsubara*.

Independent Claim 30 is directed to an apparatus like that of claim 1, except that Claim 30 does not recite ejecting means. Moreover, each of the other independent claims is, respectively, either a method or a program claim corresponding to one or the other of apparatus Claims 1 and 30. Accordingly, all the independent claims are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'L.P. Diana', followed by a horizontal line.

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